

Appl. No. 10/697,349
Docket No.: H1799-00225
Reply to Office Action of June 1, 2005

REMARKS/ARGUMENTS

As a result of this Amendment, claims 4-8 and 19-21 are under active consideration in the subject patent application.

In the Official Action, the Examiner has:

- (1) objected to claims 20-21 for various informalities and required correction;
- (2) rejected claims 4-8 and 19 under the judicially created doctrine of double patenting over claims 3-6 of U.S. Patent No. 6,802,362, and stated that a timely filed terminal disclaimer in compliance with 37 C.F.R. 1.321(c), may be used to overcome this rejection;
- (3) rejected claim 16 under the judicially created doctrine of double patenting over claim 1 of U.S. Patent No. 6,802,362, and stated that a timely filed terminal disclaimer in compliance with 37 C.F.R. 1.321(c), may be used to overcome this rejection;
- (4) rejected claims 1-3 and 17 under the judicially created doctrine of double patenting over claims 1-2 of U.S. Patent No. 6,802,362, and combined with U.S. Patent No. 2,184,345, issued to Hersey;
- (5) rejected claims 20-21 under the judicially created doctrine of double patenting over claims 3-6 of U.S. Patent No. 6,802,362, and combined with U.S. Patent No. 2,184,345, issued to Hersey;
- (6) rejected claims 1 and 3 under 35 U.S.C. § 102(b) as allegedly

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being anticipated in view of U.S. Patent No. 1,916,549, issued to Young, or U.S. Patent No. 1,927,325, issued to Ritter;

(7) rejected claims 1- 3 and 16-17 under 35 U.S.C. § 102(b) as allegedly being anticipated in view of U.S. Patent No. 2,046,791, issued to Przyborowski;

(8) rejected claim 16 under 35 U.S.C. § 102(b) as allegedly being anticipated in view of U.S. Patent No. 858,258, issued to Briscoe et al.;

(9) rejected claims 16-17 under 35 U.S.C. § 102(b) as allegedly being anticipated in view of U.S. Patent Application No. 2002/0117295, filed by Shen;

(10) rejected claims 4-8 and 19 under 35 U.S.C. § 103(a) in view of the proposed combination of Japanese Patent Application No. 08-306836, filed by Ogawara, and U.S. Patent No. 858,258, issued to Briscoe et al.;

(11) rejected claims 20-21 under 35 U.S.C. § 103(a) in view of the proposed combination of Japanese Patent Application No. 08-306836, filed by Ogawara, U.S. Patent No. 858,258, issued to Briscoe et al., and U.S. Patent No. 2,184,345, issued to Hersey; and

(12) identified prior art made of record and not relied upon but considered pertinent to Applicant's disclosure.

With regard to Item 1, Applicant has amended claims 20 and 21 so as to correct the inadvertent typographical error identified by the Examiner. Claims 20 and 21 are now correctly stated, reconsideration is requested.

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With regard to Items 2-12, Applicant has cancelled claims 1-3 and 16-17 thus rendering moot the rejections outlined in Items 3, 4, 6, 7, 8, and 9 above. Independent claim 4 has been amended so as to distinguish it from the subject matter defined by the claims of commonly owned U.S. Patent No. 6,802,362, and the disclosures from the Briscoe and Ogawara references relied upon by the Examiner. In particular, claims 4 and 19 have been amended so as to make clear that the plate has two confronting collar portions or a collar with two portions adjacent to the hole that extend approximately in a direction normal to the plate, and where each includes an internal flat surface that engages and grips a surface portion of one of the two elongated flat sides of the envelope. Support for these changes to claims 4 and 19 may be found throughout the drawings, and at least at paragraph 37. No new matter has been entered into claims 4 and 19 as a result of these changes. None of the foregoing subject matter is defined by any of the claims of U.S. Patent No. 6,802,362, let alone claims 3-6, nor is it taught or suggested in anyway by the combination of the Briscoe and Ogawara references.

More particularly, Applicant claims a heat pipe assembly including a heat pipe having an envelope that has two elongated flat sides and two curved portions connecting the flat sides. In other words, the flat sides define a surface having a length that is substantially greater than a radius of curvature of the curved portions. A fin is provided formed from a plate having a hole that is sized to accommodate the envelope. The hole has two elongated flat sides and two

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curved portions connecting the flat sides. The elongated sides have a length that is substantially greater than a radius of curvature of the curved portions. The plate also comprises two confronting collar portions adjacent to the hole that extend in a direction normal to the plate. Advantageously, each of the two confronting collar portions include an internal flat surface that engages and grips a surface portion of one of the two elongated flat sides of the envelope.

In order for a prima facie case of obviousness to be established, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, and the prior art reference (or references when combined) *must teach or suggest all the claim limitations.* MPEP §2142 [emphasis added].

Nowhere within the four corners of the Ogawara or Briscoe references, is there disclosure or even a vague suggestion of two confronting collar portions each of which include an internal flat surface that engages and grips a surface portion of one of two elongated flat sides of a heat pipe envelope, as defined in amended independent claims 4 and 19. Moreover their combined teachings, taken as a whole, do not suggest such a structure, nor would they motivate a person of ordinary skill to consider such a structure.

More particularly, the Ogawara reference discloses a flattened heat pipe whose section starts out circular and is compressed into an elliptical section (or nearly elliptical section), i.e., flattened, so as to allow for a reduced thickness in a

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heat receiving block (1) as compared to conventional circular heat pipe envelopes. Ogawara's main consideration is for the maintaining of a minimum thickness of the heat receiving block (1) which is facilitated by the flattening of its heat pipe. Although at paragraph 13 of the computer generated English translation of the reference (attached hereto for the convenience of the Examiner) appears to suggest that Ogawara's radiation fin (5) may include a rectangular cross-section, the Examiner properly admits that limitations regarding a collar portion are wholly absent from the Ogawara reference. Moreover, there is no suggestion or motivation provided by the Ogawara reference for the inclusion of such collars, since Ogawara is mainly focused on maintaining or minimizing the thickness of a heat receiving block (1). See, for example, the Ogawara Patent Abstract, last line ". . . *thereby the thickness of the heat receiving block (1) can be reduced, so that the heat receiving block (1) can be set in a small installation space. . .*"

The Examiner attempts to rely upon the Briscoe reference to supply the missing teachings with regard to a hole defined by collar portions (16) for the purpose of securing the fin to the pipe (14). Firstly, it should be noted that Briscoe's pipe (14) to which fins are secured is a tube through which liquid to be cooled flows. Applicant has claimed a heat pipe envelope which has no flowing water traveling through it. In addition, at page 2, lines 1-4, Briscoe teaches that his ". . . *flanges (16) which are designed to touch the water tubes as closely as possible. . .*" [Emphasis added] Thus Briscoe teaches only a "*touching*" of the

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flange (16) against the water tubes, not engaging or gripping a surface portion of one of two elongate flat sides of a heat pipe envelope. This is not a surprising requirement, since at line 30 of page 2, Briscoe goes on to suggest that there is a space intervening between his tube and the flange (16). At lines 54-65, Briscoe states "*. . . the melted solder regularly flows into the space between the flanges (16) and tubes (14) so that when the parts are subsequently cooled, the tubes and fins are to all intents and purposes integral with each other. It has been found by experiment that the solder flows almost entirely to the spaces between the aforesaid tubes and flanges where it performs its proper function instead of being wasted upon the surface of the tubes at points remote from the fins and flanges thereof. . . .*" Thus Briscoe requires a touching engagement so that space is defined between the structures. In this way, solder may be relied upon to flow within the space between the structures to secure the fins to the water tubes. If, *arguendo*, Briscoe were to have an internal flat surface that engages and grips a surface portion of the water tubes, there would be no space provided for the solder to flow as required by that reference.

Contrary to the heat pipe assembly taught in amended independent claims 4 and 19, Briscoe teaches that his flanges and pipes merely touch, and that space is provided between these two structures so that solder may flow and thereby act to retain them as an integral unit. This is in stark contrast to Applicant's heat pipe assembly in which two confronting collar portions each of which include an internal flat surface that engages and grips a surface portion of

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one of two elongate flat sides of a heat pipe envelope. When the teachings of Ogawara are combined with the teachings of Briscoe, as posited by the Examiner, a heat pipe assembly is provided with a flattened heat pipe having a portion of its length positioned within flanged holes defined in a series of fins; where the flanges of the fins only touch a portion of the flat heat pipe so that intervening space is provided between the heat pipe and the flange thereby allowing solder to flow to the space between the heat pipe and the flange. Applicant respectfully submits that this combination of structures, taken as a whole, does not render amended independent claims 4 and 19 obvious in any way.

Accordingly, independent claims 4 and 19 are patentable over the combination of Ogawara in view of Briscoe. Moreover, dependent claims 5-8 and 20-21 are patentable, at least through dependency from allowable independent claims 4 and 19, respectively.

With regard to Item 12, Applicant has considered the prior art references identified by the Examiner as pertinent and determined that none of them, taken alone, or in any valid combination with the Young, Ritter, Przyborowski, Briscoe, Shen, Ogawara, or Hersey references, anticipates or renders obvious the present invention.

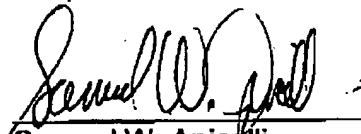
Applicants respectfully request that a timely Notice of Allowance be issued in this case.

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If a telephone conference would be of assistance in advancing
prosecution of the above-identified application, Applicants' undersigned Attorney
invites the Examiner to telephone him at 717-237-5516.

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Respectfully submitted,



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